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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,235	05/25/2001	Seiji Fuyama	0102/0165	2755

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EXAMINER	
ROBINSON BOYCE, AKIBA K	
ART UNIT	**PAPER NUMBER**
3639	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/864,235	FUYAMA, SEIJI	
	Examiner	Art Unit	
	Akiba K. Robinson-Boyce	3639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-17* is/are pending in the application.

4a) Of the above claim(s) *4 and 15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-14,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/21/03,8/20/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Due to communications filed 5/25/01, the following is a non-final first office action. Due to a restriction requirement mailed on 9/2/05, claims 4 and 15 have been withdrawn. Claims 1-3, 5-14, and 16-17 are pending in this application and have been examined on the merits. Claims 1-3, 5-14, and 16-17 are rejected as follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 7-14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Rochester, Jr. et al (US 5,687,175).

As per claim 1, Rochester, Jr. et al discloses:

a road-side device, (Col. 10, lines 7-10, remote units comprise stationary units located along the route);

first means provided in the road-side device for transmitting a polling signal, (Col. 9, lines 27-28, receiving a first signal);

second means provided in the road-side device for receiving a response of an on-vehicle device to the polling signal transmitted by the first means, (Col. 9, lines 30-33, receiving first response signals by the central unit);

third means provided in the road-side device for deciding whether or not the second means receives the response a plural number of times, (Col. 9 lines 47-48, receiving an acknowledgement signal from the central unit for a second data signal); and

fourth means provided in the road-side device for starting next radio communications with the on-vehicle device in cases where the third means decides that the second means receives the response a plural number of times, (Col. 6, lines 29-37, shows if duplicate IDs are found, an acknowledgement packet signal is sent to the corresponding sensor, where the acknowledgement packet signal represents the next radio communication).

In this claim, the first, second, third and fourth means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the first, second, third, and fourth steps, first, second, third, and fourth means are completely necessary.

As per claim 2, Rochester, Jr. et al discloses:

a first vehicle sensor for detecting a vehicle at a first position on a lane, (Fig. 6, sensor 26 is located at a first position, w/ col. 9, lines 25-32, shows the transmission of a response signal by the remote unit [contains sensors] upon detection of a signal sent by the central unit [mobile unit or vehicle], this represents detecting the vehicle, therefore, the vehicle is first detected at the location of sensor 26);

a second vehicle sensor for detecting a vehicle at a second position on the lane which is adjacently ahead of the first position, (Fig. 6, sensor 30, which is shown to be

located adjacently ahead of the first sensor 26 since the vehicle is moving from east to west, w/ col. 9, lines 25-32, shows the transmission of a response signal by the remote unit [contains sensors] upon detection of a signal sent by the central unit [mobile unit or vehicle] this represents detecting the vehicle, therefore, the vehicle is detected at the location of sensor 30 after it's detection at the location of sensor 26);

first means for transmitting a polling signal when the first vehicle sensor detects a vehicle, (Col. 9, lines 27-28, receiving a first signal);

second means for receiving a response of an on-vehicle device to the polling signal transmitted by the first means, (Col. 9, lines 30-33, receiving first response signals by the central unit); and

third means for, after the second means receives the response, starting next radio communications with the on-vehicle device in cases where both the first and second vehicle sensors detect a vehicle, (Col. 6, lines 29-37, shows if duplicate IDs are found, an acknowledgement packet signal is sent to the corresponding sensor, where the acknowledgement packet signal represents the next radio communication).

In this claim, first, second, and third means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the first, second, and third steps, first, second, and third means are completely necessary.

As per claim 7, Rochester, Jr. et al discloses:

a road-side device, (Col. 10, lines 7-10, remote units comprise stationary units located along the route);

first means provided in the road-side device for receiving data from an on-vehicle device, (Col. 9, lines 27-28, receiving a first signal by remote units);

second means provided in the road-side device for receiving a communication end signal from the on-vehicle device after the first means receives the data therefrom, (Col. 6, lines 18-24, Acknowledgment Packet Signal received by the remote sensor);

and third means provided in the road-side device for handling the data received by the first means as effective data regardless of whether or not the second means successfully receives the communication end signal, (Col. 6, lines 29-30, sensors that successfully receive an acknowledgement Packet signal continue to respond to poll packets).

In this claim, first, second, and third means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the first, second, and third steps, first, second, and third means are completely necessary.

As per claim 8, Rochester, Jr. et al discloses:

further comprising means provided in the on-vehicle side device for transmitting the communication end signal a plural number of times, (col. 4, lines 25-26, shows plural sensors, w/ col. 6, lines 34-36, shows that an Acknowledgement Packet Signal sent to the sensor, therefore, plural Acknowledgement Packet Signals are transmitted).

As per claim 9, Rochester, Jr. et al discloses:

a first road-side antenna for providing a first radio-communication service area, (Col. 10, lines 7-10, remote units comprise stationary units located along the route, w/

col. 2, line 65-col. 3, line 2, shows that remote sensors are equipped with RF transceivers [which represent antennas]);

first means for implementing radio communications with an on-vehicle device via the first road-side antenna, (Col. 9, lines 27-28, receiving a first signal, where the signal is an RF signal for the RF transmitter);

a second road-side antenna for providing a second radio-communication service area different from the first radio-communication service area, (Col. 4, lines 25-26, shows plural sensors are used, therefore meaning plural [2 or more] RF transmitters);

second means for implementing radio communications with an on-vehicle device via the second road-side antenna, (Col. 9, lines 27-28, receiving a first signal, w/ Col. 4, lines 25-26, shows plural sensors are used, therefore meaning plural [2 or more] RF transmitters are used to transmit more than one radio communication);

third means for controlling the first means and the second means to execute the radio communications via the first road-side antenna and the radio communications via the second road-side antenna in a way selected from plural ways including a time sharing way, (Col. 5, lines 57-67, sensors determine their respective times slots for ID transmission).

In this claim, first, second, and third means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the first, second, and third steps, first, second, and third means are completely necessary.

As per claim 10, Rochester, Jr. et al discloses:

wherein the plural ways includes a frequency division way in which a frequency of a radio signal used in the radio communications via the first road-side antenna differs from a frequency of a radio signal used in the radio communications via the second road-side antenna, (Abstract, lines 1-14, monitoring an RF transmission Frequency thereby allowing remote units to detect a message containing time division base specifying the number of time slots allocated for transmission).

As per claim 11, Rochester, Jr. et al discloses:

a first road-side antenna for providing a first radio-communication service area, (Col. 10, lines 7-10, remote units comprise stationary units located along the route, w/ col. 2, line 65-col. 3, line 2, shows that remote sensors are equipped with RF transceivers [which represent antennas]);

first means for implementing radio communications with an on-vehicle device via the first road-side antenna, (Col. 9, lines 27-28, receiving a first signal, where the signal is an RF signal for the RF transmitter);

a second road-side antenna for providing a second radio-communication service area different from the first radio-communication service area, (Col. 4, lines 25-26, shows plural sensors are used, therefore meaning plural [2 or more] RF transmitters);

second means for implementing radio communications with an on-vehicle device via the second road-side antenna, (Col. 9, lines 27-28, receiving a first signal, w/ Col. 4, lines 25-26, shows plural sensors are used, therefore meaning plural [2 or more] RF transmitters are used to transmit more than one radio communication);

third means for writing information related to the first road-side antenna into a memory within an on-vehicle device through the radio communications implemented by the first means, (Col. 6, lines 21-22, stores ID of sensor in memory);

fourth means for accessing a memory within an on-vehicle device through the radio communications implemented by the second means, and deciding whether or not the information related to the first road-side antenna is in the accessed memory, (Col. 6, lines 30-36, comparing IDs stored in memory to IDs received by the mobile unit); and

fifth means for halting the radio communications implemented by the second means when the fourth means decides that the information related to the first road-side antenna is not in the accessed memory, (Col. 6, lines 36-37, if the ID is not found in the memory, the acknowledgment packet signal is not sent).

In this claim, first through fifth means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the first through fifth steps, first through fifth means are completely necessary.

As per claim 12, Rochester, Jr. et al discloses:

sixth means for preventing reflection of a radio wave with respect to first radio-communication service area, (Col. 6, lines 30-34, comparing IDs in order to eliminate duplicate processing).

In this claim, sixth means are inherent with Rochester, Jr. et al since they disclose a system and method, and in order to carry out the functions of the method and process the sixth step, first through sixth means are completely necessary.

As per claim 13, Rochester, Jr. et al discloses:

transmitting a polling signal from a road-side device, (Col. 9, lines 27-28, receiving a first signal);

enabling the road-side device to receive a response of an on-vehicle device to the polling signal, (Col. 9, lines 30-33, receiving first response signals by the central unit);

deciding whether or not the road-side device receives the response a plural number of times, (Col. 9 lines 47-48, receiving an acknowledgement signal from the central unit for a second data signal); and

enabling the road-side device to start next radio communications with the on-vehicle device in cases where it is decided that the road-side device receives the response a plural number of times, (Col. 6, lines 29-37, shows if duplicate IDs are found, an acknowledgement packet signal is sent to the corresponding sensor, where the acknowledgement packet signal represents the next radio communication).

As per claim 14, Rochester, Jr. et al discloses:

detecting a vehicle is at a first position on a lane, (Fig. 6, sensor 26 is located at a first position, w/ col. 9, lines 25-32, shows the transmission of a response signal by the remote unit [contains sensors] upon detection of a signal sent by the central unit [mobile unit or vehicle], this represents detecting the vehicle, therefore, the vehicle is first detected at the location of sensor 26);

detecting a vehicle at a second position on the lane which is adjacently ahead of the first position, (Fig. 6, sensor 30, which is shown to be located adjacently ahead of

the first sensor 26 since the vehicle is moving from east to west, w/ col. 9, lines 25-32, shows the transmission of a response signal by the remote unit [contains sensors] upon detection of a signal sent by the central unit [mobile unit or vehicle] this represents detecting the vehicle, therefore, the vehicle is detected at the location of sensor 30 after it's detection at the location of sensor 26);

transmitting a polling signal when a vehicle at the first position is detected, (Col. 9, lines 27-28, receiving a first signal);

receiving a response of an on-vehicle device to the polling signal, (Col. 9, lines 30-33, receiving first response signals by the central unit); and

after the response is received, starting next radio communications with the on-vehicle device in cases where both a vehicle at the first position and a vehicle at the second position are detected, (Col. 6, lines 29-37, shows if duplicate IDs are found, an acknowledgement packet signal is sent to the corresponding sensor, where the acknowledgement packet signal represents the next radio communication).

As per claim 16, Rochester, Jr. et al discloses:

receiving data from an on-vehicle device, (Col. 9, lines 27-28, receiving a first signal by remote units);

receiving a communication end signal from the on-vehicle device after the data are received therefrom, (Col. 6, lines 18-24, Acknowledgment Packet Signal received by the remote sensor); and

handling the received data as effective data regardless of whether or not the communication end signal is successfully received, (Col. 6, lines 29-30, sensors that

successfully receive an acknowledgement Packet signal continue to respond to poll packets).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 5, 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochester, Jr. et al (US 5,687,175).

As per claim 3, Rochester, Jr. et al does not specifically disclose:

wherein the second vehicle sensor is spaced from the first vehicle sensor at an interval of about 80 cm, but does show that the sensors are spaced along the lane in Figures 6-9.

However, official notice is taken that it is old and well known in the vehicle detection art for the vehicle sensors to be spaced at intervals of about 80 cm. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to space the vehicle sensors at intervals of about 80 cm with the motivation of detecting a vehicle every 80 cm as it moves along the lane, and guaranteeing accurate measurements.

As per claim 5, Rochester, Jr. et al discloses:

an on-vehicle device, (Col. 10, lines 7-10, shows that central unit comprises a mobile unit traveling along a route);

first means provided in the on-vehicle device for receiving data from a road-side device, (Col. 9, lines 25-28, transmitting a first response signal from the remote units [represents the road-side device] to the central unit [which comprises a mobile unit]);

second means provided in the on-vehicle device for receiving a communication end signal from the road-side device after the first means receives the data therefrom, (Col. 6, lines 18-24, Acknowledgement Packet signal received and sensor placed into a wait state where it does not respond, in this case, Rochester, Jr. et al does not specifically disclose that the communication end signal is received by the on-vehicle device from the road-side device, however does disclose a system that utilizes RF signals. Since the on-vehicle device provides the communication end signal, this same device can also receive the same signal. The use of RF signals encourages the easy transmission of between units, meaning that when a signal is sent from the on-vehicle unit to the road-side device, the road-side device can send that same signal back to the in-vehicle unit);

and third means provided in the on-vehicle device for handling the data received by the first means as effective data regardless of whether or not the second means successfully receives the communication end signal, (Col. 6, lines 29-30, sensors that successfully receive an acknowledgement Packet signal continue to respond to poll packets).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the communication end signal to be received by the on-vehicle

device from the road-side device with the motivation of getting full usage of RF signals by transmitting a signal between units.

As per claim 6, Rochester, Jr. et al discloses:

means provided in the road-side device for transmitting the communication end signal a plural number of times, (col. 4, lines 25-26, shows plural sensors, w/ col. 6, lines 34-36, shows that an Acknowledgement Packet Signal sent to the sensor, therefore, plural Acknowledgement Packet Signals are transmitted).

As per claim 17, Rochester, Jr. et al discloses:

first means for receiving data from a road-side device, (Col. 9, lines 25-28, transmitting a first response signal from the remote units [represents the road-side device] to the central unit [which comprises a mobile unit]);

second means for receiving a communication end signal from the road-side device after the first means receives the data therefrom, (Col. 6, lines 18-24, Acknowledgement Packet signal received and sensor placed into a wait state where it does not respond, in this case, Rochester, Jr. et al does not specifically disclose that the communication end signal is received by the on-vehicle device from the road-side device, however does disclose a system that utilizes RF signals. Since the on-vehicle device provides the communication end signal, this same device can also receive the same signal. The use of RF signals encourages the easy transmission of between units, meaning that when a signal is sent from the on-vehicle unit to the road-side device, the road-side device can send that same signal back to the in-vehicle unit); and

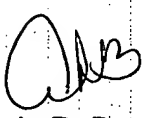
third means for handling the data received by the first means as effective data regardless of whether or not the second means successfully receives the communication end signal, (Col. 6, lines 29-30, sensors that successfully receive an acknowledgement Packet signal continue to respond to poll packets).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 571-272-6734. The examiner can normally be reached on Monday-Tuesday 8:30am-5pm, and Wednesday, 8:30 am-12:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7238 [After final communications, labeled "Box AF"], 703-746-7239 [Official Communications], and 703-746-7150 [Informal/Draft Communications, labeled "PROPOSED" or "DRAFT"].

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



A. R. B.
November 30, 2005